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I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004900269 for a patent by DIANE DROMGOLD as filed on 21 January 2004.

I further certify that the above application is now proceeding in the name of RNC GLOBAL PROJECTS pursuant to the provisions of Section 113 of the Patents Act 1990.



WITNESS my hand this
Second day of February 2005

A handwritten signature in black ink, appearing to read 'J. Peisker'.

JANENE PEISKER
TEAM LEADER EXAMINATION
SUPPORT AND SALES

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AUSTRALIA

Provisional
Regulation 3.2

Patents Act 1990

PROVISIONAL SPECIFICATION

Invention Title: Project management method and system

The invention is described in the following statement:

A Project Management Method and System

Field of the Invention

The invention relates to a method and system for assisting in the management of projects.

Background of the invention

Over the years, various systems, methods and tools have been used in project management across various sectors including engineering, construction, and, more recently, in IT and corporate and government organizations.

One of the main problems associated with project management is the relatively high failure rate of projects. Recent estimates of the failure rate for projects in the corporate, government and IT sectors have varied between 75 per cent and 83 per cent. This is despite a significant body of knowledge in the area of project management having been developed over the years. Gantt charts have become the default standard layout for assisting in project management in these areas.

A simplified version of Gantt chart is set out at 10 in Figure 1. A series of broad tasks 12 and 13 are listed in the leftmost task column, and various start and end dates 14 are listed along the uppermost timing row. The broad tasks 12 and 13 are divided up into more detailed tasks 12.1 to 12.4 and 13.1 to 13.5, each one of which has an associated bar 12.1a, 12.2a which is indicative of how long the task is expected to take. The human resources that need to be applied to each task typically appear in a box alongside each bar, as is shown at 12.1b and 12.2b. Names of individuals allocated to tasks typically appear in a number of different boxes. Dependency links between task bars are indicated by arrows 24. A list of all those individuals involved in the project appears in a resource column 25 to the immediate right of the detailed task column.

Whilst a Gantt chart does provide a fairly clear visual indication of each main task, its duration, its interdependency and the applicable resource set or team which needs to be applied to each task, the inventor has concluded that the relatively high

004528427

2

recorded failure rate is indicative of systemic problems existing in the area of project management and of possible shortcomings in the conventional Gantt chart as the primary project management tool.

Summary of the invention

In broad terms, the invention is directed towards a project management system and method which is focused on the individuals or teams associated with the events or performing the tasks rather than the events or tasks per se. The primary building blocks are accordingly the individuals or teams involved in the project, and their individual capacity and ability with respect to the events/tasks making up the project. Whilst dependency links are still event- or task-based, the links are made between individuals or teams responsible for completing and initiating tasks, thereby to devolve responsibility and accountability on to individuals or teams.

Not only is the project plan presented in such a way that each individual in the project can view immediately what his or her tasks are and how the initiation and completion of these tasks or events depend on or are depended on by other individuals involved in the project, but also the overall construction of the plan is based on the availability and ability of individuals or teams. As a result, the overall project management method involves deconstruction of the project to an individual/team tasks level and reconstruction of the individual/team tasks and timing after an iterative individual- or team-based consultative process has occurred.

According to one aspect of the invention there is provided a computer-based method of facilitating the management of a project including:

providing a project management database configured to receive a plurality of entries, including a series of tasks or events and a series of attributes associated with the tasks or events, the attributes including time-based attributes indicating the timing of the tasks or events, and resource-based attributes indicating at least the human resources allocated to the tasks or events;

004528427

3

generating at least a first display interface from the database in which each human resource is listed with its associated tasks and time-based attributes;

storing entries in the database; and

compiling a project management plan in which the tasks and associated time-based attributes are listed against each of the human resources.

In a preferred form of the invention, the method includes inserting or enabling dependency-based links to be inserted between dependent tasks or events associated with the human resources.

Preferably, the human resources are listed in a one-to-one or one-to-many relationship with respect both to the tasks and to the associated attributes.

The human resources may be in the form of individuals or teams. In the case of a team-based approach, the team itself is typically broken down into individuals, and a resultant sub-project undertaken by the team is similarly managed in accordance with the method of the invention.

Advantageously, the method includes generating and displaying individual project sub-plans for each individual resource, enabling the individual project sub-plans to be modified, and combining the modified individual sub-plans into an overall modified project management plan. This typically involves an iterative process, and may include deconstructing the resultant modified plan into individual plans and reconstructing the individual plans to arrive at a final project management plan.

The resource-base attributes may also include non-human resources required in the implementation of the project, including facilities such as equipment, supplies, premises, and costs associated therewith.

The project management plan is typically arranged in a Gantt chart-type format, as are the individual plans making up the project management plan.

In one aspect, the invention extends to a project management database of the type described above.

004528427

4

The database is preferably a relational database comprising a plurality of tables.

The tables preferably include a primary human resource table, which is typically linked to secondary tables in a one-to-one or one-to-many relationship.

The secondary tables may be chosen from a secondary group including task, date/time, project parameter and label tables. The label tables may be configured to be filled in at the commencement of a project, and may remain static throughout.

The fields of the relational database are typically tagged so that scripts can be written to cause reports to be generated.

The invention further extends to a computer-based system for assisting in the management of a project including:

a project management database arranged to receive a plurality of entries, including a series of events or tasks and a series of attributes associated with the events or tasks, the attributes including time-based attributes indicating the timing of the events or tasks, and resource-based attributes indicating at least the human resources allocated to the events or tasks;

a first display interface derived from the database in which human resources are listed against events or tasks in such a way that each human resource is individually listed with the events or tasks associated with that resource;

processor means for generating a project management plan in which events or tasks and time-based attributes are listed against each of the resource-based attributes.

Preferably, the system includes a plurality of display interfaces, each display interface having individual human resources listed against events or tasks associated with that resource.

Conveniently, the system includes means for enabling dependency-based links to be inserted between dependent tasks or events associated with the human resources.

The invention further extends to a computer readable medium having stored thereon executable instructions for causing a computer to perform a method of the type described above, and for interacting with database of the type described above.

Brief description of the drawings

Figure 1 shows a simplified schematic diagram of a prior art Gantt chart;

Figure 2 shows a schematic block diagram of the project management system of the invention;

Figure 3 shows a flowchart of the overall project management process which is facilitated by the steps set out in Figures 3A to 3G;

Figure 3A shows a first Gantt chart-type data entry interface of the invention;

Figure 3B shows a second data entry interface of the invention;

Figure 3C shows a third data entry interface table of the invention in which individual tasks are separately allocated against individual resources;

Figure 3D shows the table of Figure 3C including dependency links;

Figure 3E shows a user interface incorporating a personalised task list for an individual in the project;

Figure 3F shows a modified task list for the individual;

Figure 3G shows a modified user interface in the form of a table similar to that of Figure 3D but after the allocation of tasks has been validated with the individuals scheduled to do the work;

Figure 4 shows a similar flowchart illustrating the steps involved in implementing the project management method and system of the invention;

Figure 5 shows a diagram of the main tables involved in a relational database forming part of the project management system of the invention;

Figure 6 shows the diagram of Figure 5 with a series of exemplary links inserted;

004528427

6

Figure 7 shows a table of a sample progress report by person or resource, and

Figure 8 shows a table of a sample progress report by task.

Detailed description of the embodiments

Referring now to Figure 2, a high-level diagram of the architecture of a project management system 30 is shown, including a CPU 32, linked to a relational database 36. The CPU is operated via a computer terminal 38 providing a standard user interface, and is also linked to a communications interface in the form of a net server 40 communicating over a local and/or wide area network 41 such as the internet, with a number of remote computer terminals 38.1 to 38.N. The computer terminal 38 is linked to a printer 42.

The relational database 36 includes entries in a memory structure for receiving data associated with a project, including a task data set incorporating all of the main and sub-tasks associated with the project, and a series of attribute data sets. These include a timing data set including start and end times and dates associated with each of the tasks, a human resource data set including the list of people to be involved in the project and their availability and potential utilization over the period, a non-human resource data set including all significant non-human resources required, such as all plant, equipment and supplies which need to be pre-allocated or shared, and a dependency data set including details of dependencies between tasks. The relational database 36 is typically implemented with a commercial software relational database application that is SQL compliant and can handle binary large objects, such as Interbase. Operation of the relational database is controlled by a scheduler application 43. A project management application 44 also controls the operation of the relational database, and can be integral with or separate from the scheduler application.

This application may either be a commercial project management tool that exists outside the scheduler application 43 e.g. Microsoft Project or Primavera; or a custom built project management tool created specifically to facilitate the scheduler application. The scheduler application 43 may be arranged to work with already commercially available project management systems.

The abovementioned attribute data sets may be stored in the relational database 36 in tabular form, as is clear from Figure 5. The CPU 32 may include a notebook application for enabling changes to be made to attributes and tasks to be recorded, and for notes on the underlying reasons for the changes to be made where necessary.

Referring first to Figure 3, a flowchart of the overall project management process is shown reflecting the various steps which will be described in more detail with reference to Figures 3A to 3G. After success criteria and assumptions for the project have been identified and documented at 45.1 and 45.2, an overall high level project plan is prepared at 45.3, and a Gantt-type chart is initially assembled, as shown in Figure 3A. This includes an initial set of assumptions about what is required, by when, and which resources will be available to fulfil the tasks and project. Major work elements or tasks are identified in the leftmost column at 50, and the relevant dates and milestones are indicated at 52 in the uppermost row of the chart, with the bars 54 indicating that the duration of each main task, and the arrows 56 indicating the dependencies, as is indicated at step 45.4 in Figure 3. This process will not be described in any more detail as it will be well known to those of normal skill in the area of project management. Suffice is to say that it is critical to identify the success criteria and to list all the assumptions about the project.

From the plan, a more detailed list of tasks is made, such as those listed in example 1 below, and indicated at 45.5.

Example 1

	3/02/2004	Surface mount the boards
	3/03/2004	Give Nic and Dejang a loaded board with through hole
	20/02/04	Update BOM on Oracle
	24/02/04	Confirm parts availability
URGENT	24/02/04	Organise kitting of parts
	24/02/04	Confirm status of all parts, ie top cover, specs etc freeze

004528427

8

26/02/04	Obtain status on Jig/tooling requirements
26/02/04	review and Update Final Product Boms in Oracle
28/02/04	Confirm all specs are published
28/02/04	No more changes to BOMS in Oracle
15/03/04	Document manufacturability of units and meeting with production
15/03/04	Begin process FMEA
28/03/04	Complete process FMEA
28/03/04	Complete training of ACS2 personnel for production equivalent build

It will be appreciated that this is first pass at the task list, which will typically be worked on by the project manager in conjunction with a small team and the tasked individuals.

In Figure 3B, a breakdown of the various main tasks into sub-tasks is indicated at 58, with dependency links being shown at 60.

Subsequently, all of the people available to work on the project are listed (see 45.6 in Figure 3) and entered via the user terminal. It is also indicated alongside each person whether they are dedicated or shared, and if shared, what percentage of their time is likely to be available for the project. The project manager then performs a validation step to ensure that these people are actually available over the relevant time period. Details regarding their non-availability over the time period may also be entered.

A chart or table of the type illustrated in Figure 3C is then generated, with the people concerned being listed down the leftmost column, as is indicated at 62, and relevant dates and milestones being listed in the uppermost row of the table. The table is then populated with tasks against each of the relevant people within the constraints of the relevant dates and deadlines, as is shown at 45.7 and 45.8 in Figure 3. At this

004528427

9

stage, it starts to become clear who the key people are, where the shortages and excesses are, and what expected tasks have no one to do them. It also becomes clearer that there might be some people allocated to the project who are not really able to contribute to the extent required to achieve the outcome. It is also likely that some tasks will remain unallocated in the initial stages. The tasks can then be re-grouped in a different sequence to assist in determining the resources required. The table in Figure 3C indicates one of the main aspects of the present invention that differs over the traditional project management approach. By focusing on the available people for the project and allocating specific tasks to them in chronological order, each person can see what is expected of them without having to scan up and down the project Gantt chart to see where their names might appear in the relevant boxes 22.1, as is the case with Figure 1. The table of Figure 3C indicates clearly to each person whether or not the workload and timing of tasks is realistic. In certain cases, tasks may be misallocated due to the wrong skill set, and this will immediately become apparent when each individual views this table.

The project manager then interviews each person on the project team (45.9 in Figure 3) with a view to assessing the allocation of tasks and uncovering tasks and commitments that the person needs to fulfil to complete his or her tasks. This step often results in a reality check when presumed data (which would under traditional project management approaches already have published to the organisation and the project team) are revised and some replanning can take place. This is represented at steps 45.9 to 45.11. Each person then knows what is required of them and has had input to ensure they will be able to do the job. At this stage, dependency links such as these shown at 70 and 72 may be added, as is shown at step 45.12. Dependency links indicate where one person's task is dependent on someone else finishing their task. After the project is set up and established these are the people and activities that the project manager will need to spend most time on. If these activities are completed on time then the project should proceed on time and any variations at any stage can either be accommodated through replanning or reported as an impact on the overall project.

004528427

10

It will be appreciated that significant editing and amending of the project management plan can be necessary at this point in time, particularly to ensure that dependencies are not inconsistent, and that none of the dependency links run backwards. After the dependency-based chart of Figure 3D is finalised, individuals may be interviewed again with a view to ensuring that they are able and willing to perform what is required of them within the given time periods, and that all of the dependencies have been correctly identified and noted, as is shown at steps 45.13 to 45.16.

A personalised list of type illustrated in Figure 3E is generated for each person involved in the project. Figure 3E indicates a tabulated list generated for one of the team members, in this case Linda. Individual plans for each of the members of the project are similarly generated for review by the relevant individuals, for confirmation or modification.

In Figure 3F, a modified table is shown in which certain modifications to Linda's task list have been made on the basis of her suggestions. For example, Linda has suggested dates 1 and 2 for defining the test market and writing the protocol and moving working on the marketing materials to date 3. Having pointed out that the testing and developing of marketing materials are simply incompatible, it is then suggested that Susan be used for testing as Linda is better at marketing. This is accordingly implemented. Linda also points out that the market test requires three dates and that this is not included on the plan. The project manager's assumption that the market testing can be conducted in one date is clearly incorrect. The market test cannot be brought forward as it is dependent upon completion of the product testing. This will have the effect of changing the release date and will need to be discussed with management before being implemented. The final round of modifications is shown at 45.17 to 45.20, though it will be appreciated that the processes are iterative, and are generally repeated, ideally until there is overall satisfaction and buy-in from all involved.

004528427

11

The table of Figure 3C shows a modified view of Figure 3D, with the table having been updated after the discussions with Linda and management, who have been made aware of the change in release date beforehand.

Referring now to Figure 4, the various steps involved in implementing the system for different types of data entry are shown. In the flowchart, an originating project management system 80 is shown as a starting point. This may include a project management system implemented on a known project management scheduler application such as Microsoft® Project or Primavera®. The new project management system 82 of the invention may serve as an add-on to the originating system, in the form of the new project management application 44 and may receive data in a number of different ways from the originating system. As is shown at 84 data may be entered afresh into the relational database 36 of the new project management system to supplement the existing data. This may include resource data, task data, time data and dependency data. Alternatively, additional data may be incorporated by providing an interactive interface 86 with the existing project management system 80 which is designed to operate in conjunction with the new project management system 82. Stored data from an external originating system may also be imported separately from the originating project management system, as is shown at 88, by any known data transfer technique. This means that via whichever means appropriate, information can be entered into the new system to enable management of the project by monitoring, managing and supporting the allocated human resources.

The new project management system 82 displays the input data in the format illustrated in Figure 3C, as is shown at 90. In a manually based version, the allocation of tasks to different resources is implemented using a click-and-drag routine, as is shown at 92, thereby ending up with the modified display similar in form to that of Figures 3C and 3D, in which the dependencies have been inserted, with human resources being displayed in the left-most column and tasks allocated chronologically to the right of each resource, as is indicated at 94. The click-and-drag routine is repeated until task allocation is optimised. If this changes the overall project plan, as is shown at 96, then the originating management system 80 receives data manually in

004528427

12

the case of data entry and interactive interface options 84 and 86, or electronically in the case of remote data import 88. The process is completed once the overall project plan is settled and individual allocation of the tasks has been optimised.

In an alternative automated version, shown at 100, the new management system allocates tasks to human resources automatically using an optimisation routine. In the optimisation routine the system will allocate tasks to people to ensure the project timeframes are met without over allocation of any single resource. Once optimisation has been applied, the project manager and people on the project can review the suggested allocations and amend or accept as appropriate. This facility should not be relied on as the definitive project plan until it has been reviewed and approved by the project manager and affected staff.

System overview

The stage when tasks have to be assigned to resources can initially be done with a standard box frame screen, by entering the task identifier against the required resource. A 'click-and-drag' facility is alternatively developed to handle the assigning of tasks as is shown at 92 in Figure 4. The end result will be the ability to view and print reports. The relational database which is incorporated into the system uses BLOB's (where the data is compressed in Binary Large Objects) to prevent users making direct changes and to preserve product integrity.

The various steps involved in entering, modifying and deleting tasks, entering, modifying and deleting resources, allocating tasks to resources and entering timing considerations (including milestones, and mandatory or agreed dates) will now be set out in more detail.

The relational database structure 36 of Figure 5 is used in this process. Task table 110 includes various fields, each of which are listed in the table. Task resource requirement table 112 enables tasks in task table 110 to be matched up to resource requirements in this table, and shares a common task ID field with task table 110. Additional tables include project overhead label table 114, and resource table 116, which is the primary and governing table in the relational database, in the sense that

004528427

13

resource fields in this table are linked to other fields in the relational database in a one-to-one or one-to-many relationship. Optional tables include people skills table 118, resource type table 120 and industry label table 122. Role label table 124 illustrates the roles of the various resources, and resource task table 126 includes resource, time and task fields. Project parameter table 128 includes various time parameter fields, and special date table 130 includes various date fields, including start and end dates. Date label table 132 includes fields indicating various date types.

Label tables are filled in at the commencement of each project and remain static throughout. Once set up they provide an automatic display to the project delivery display. The fields in the various tables are interrelated, as is clear from their descriptors. The relational database is designed such that all fields are tagged so that scripts can be written to cause reports to be generated. The various links or relationships in the relational database may be one-to-one or one-to-many. Figure 6 shows a selection of typical links that can be implemented.

Enter/Modify/Delete Tasks

The steps involved in entering, modifying and deleting task tables in the relational database can be summarised as follows:

- List major tasks (work groups) (Several levels may be required)
- Note dependencies for each task (each task can have multiple dependencies)
- Estimate effort and elapsed time for each task
- After the major tasks have been entered, sub tasks need to be entered under the appropriate major task heading, to complete the full list of tasks that form a work group
- After known resources have been allocated to tasks (see below) it is likely that some tasks will remain unallocated in the initial stages. At that time the tasks are likely to have to be re-grouped in a different order to assist in determining the resources required

- The task description will be used to develop position descriptions

Tables/Fields required in the relational database include task table 110, task resource table 112, and project overhead label table 114.

Note: The Task Identifier should be system generated and include an initial character (e.g. 'T') to show it is a genuine active task on the project. Other task identifiers will be included in tables to indicate a repetitive project overhead task ('O') and to provide descriptions for why a resource will not be available to the project ('U').

Enter/Modify/Delete Resources

- A known resource can be allocated to the project
- A maximum percentage of time that any resource is available to the project needs to be assigned. This includes facility to allow for the percentage of time to change over the life of the project
- A percentage of time any resource is allocated to specific tasks such as Project Management, Reporting, Admin, Recruitment, Giving Training, Receiving Training, Conferences, Leave (Rec, Sick, Special), Other needs to be assigned. This includes a facility to allow for the percentage of time to change over the life of the project
- A linear picture of work groups and dependencies while entering resource information needs to be viewed

Tables/Fields Required in the relational database include resource table 118 and a sub-resource table (not shown but listed below with relevant fields).

Note: The Resource Identifier should be system generated and include an initial character (e.g. 'P') to indicate a person on the project. Other resource identifiers will be included to indicate other non-human related resources required by project such as 'H' for hardware, 'S' for Software, etc. A sub-resource category is required for resources that are specifically related to another resource. For example each person

004628427

15

will require such items as a phone line, PC, site access rights, etc. The format of a typical sub-resources table is listed below.

Sub-Resources Table:

ResourceDescription/ResourceType/ResourceIdentifier(SG)/PrintOrder/PercentageAv/FromDate/ToDate/HigherLevelResourceIdentifier

Allocate Task to Resources

This needs to be done on a user interface screen of the type indicated in Figure 3C. ResourceTask Table 126 is used for this purpose.

Enter Timing Considerations (Milestones, Mandatory, or Agreed, Dates)

Each milestone is to have a unique identifier.

Project parameter table 128 is used in conjunction with special dates table 130 and date label table 132 for the entry of all timing considerations.

Reports

1. List of tasks by work group
2. Timeline report by major task groups showing dependencies(*)
3. Sub-timeline report for sub-tasks showing dependencies(*)
4. List of resources with tasks laid out in time order
5. List of resources with tasks laid out in task groups (for export to position description/project contract)
6. Discrepancy report (including orphan tasks, over/under allocation of resources)
7. Progress by Task
8. Progress by Resource
9. Percentage allocation of time per resource
10. Critical Path

11. Progress Variance (where actual progress varies from the estimate)
Need to summarise variance in actual days & show impact on the project.

- * to show pre, post and co dependencies

A sample progress report by person or resource is shown in Figure 7, and a similar report by task is shown in Figure 8. These reports need to highlight where dependencies come in.

Data Export Facility

In addition to viewing each report from the user interface 38, and printing them, a facility will be provided to export the data in each report in XML format.

In traditional project management, there is a task focus, whereas in the project management system of the invention, there is a people focus in which people are very clear about expectations. In a typical project management scenario problems are often hidden until one of the final stages rather than becoming evident at an early stage. The project management system and method of the invention tends to foster realistic planning and ownership in the plan and tends to be adopted by each person on the project rather than seen as being owned by project management. The system of the invention also provides little room for unconscious over-allocation of people.

The invention also allows people to work to achieve tasks that are clear and set in the overall context of an outcome, rather than working for an abstract project. Essentially, the invention employs the philosophy that people like and need to know exactly what they need to do when, exactly what individual support they need to provide to others, and what other individuals need to provide to them. By looking at projects from the perspective of the people doing the project, there is an increase in focus on individual performance and responsibility. Any over-commitment or lag can readily be ascertained in a resource-based system of the invention. The invention further provides a tool for assisting in driving delivery through individuals knowing

004528427

17

what they have to do and when, rather than merely serving as a reporting tool to assist in explaining slippage.

It will be understood that the invention disclosed and defined herein extends to all alternative combinations of two or more of the individual features mentioned or evident from the text or drawings. All of these different combinations constitute various alternative aspects of the invention.

The foregoing describes embodiments of the present invention and modifications, obvious to those skilled in the art can be made thereto, without departing from the scope of the present invention.

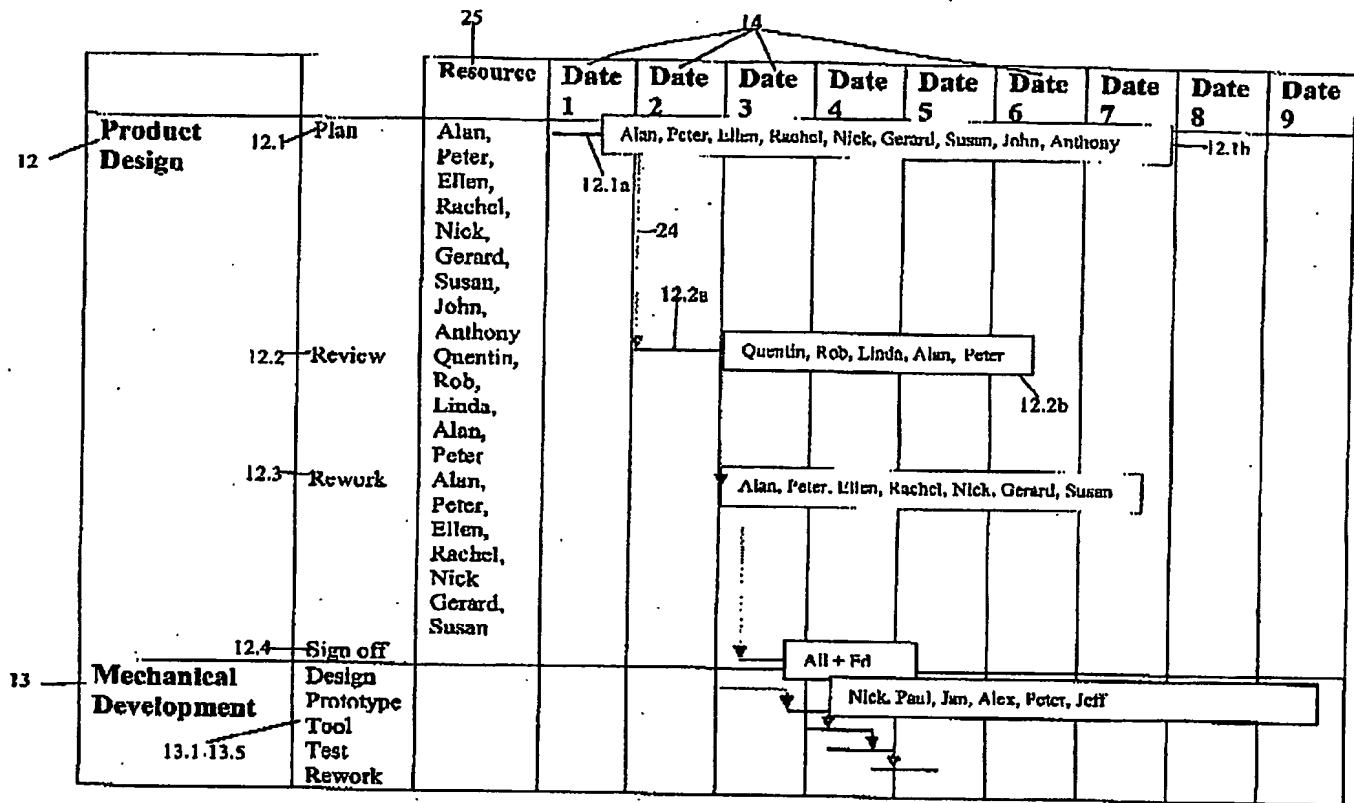


Figure 1

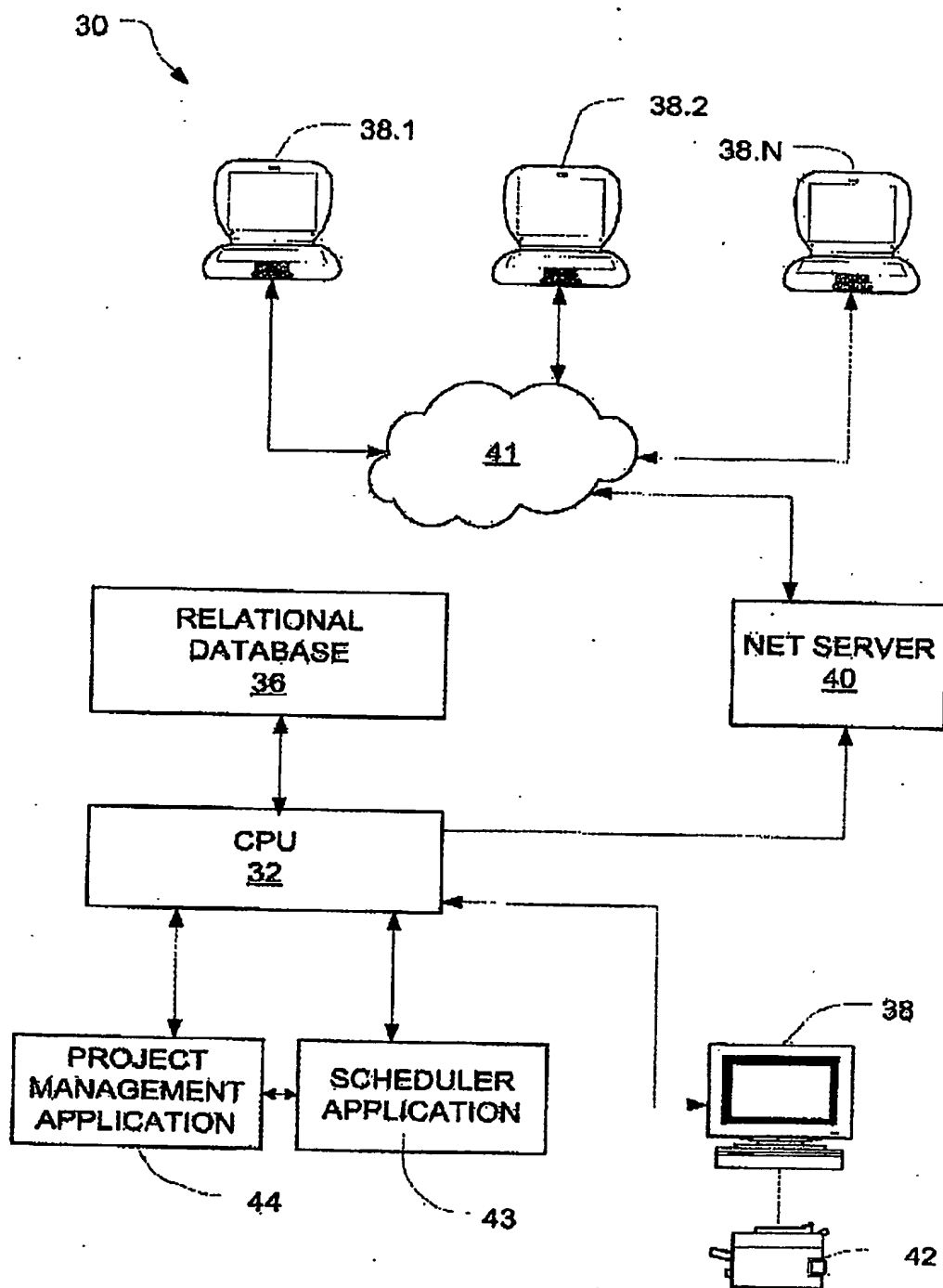


Figure 2

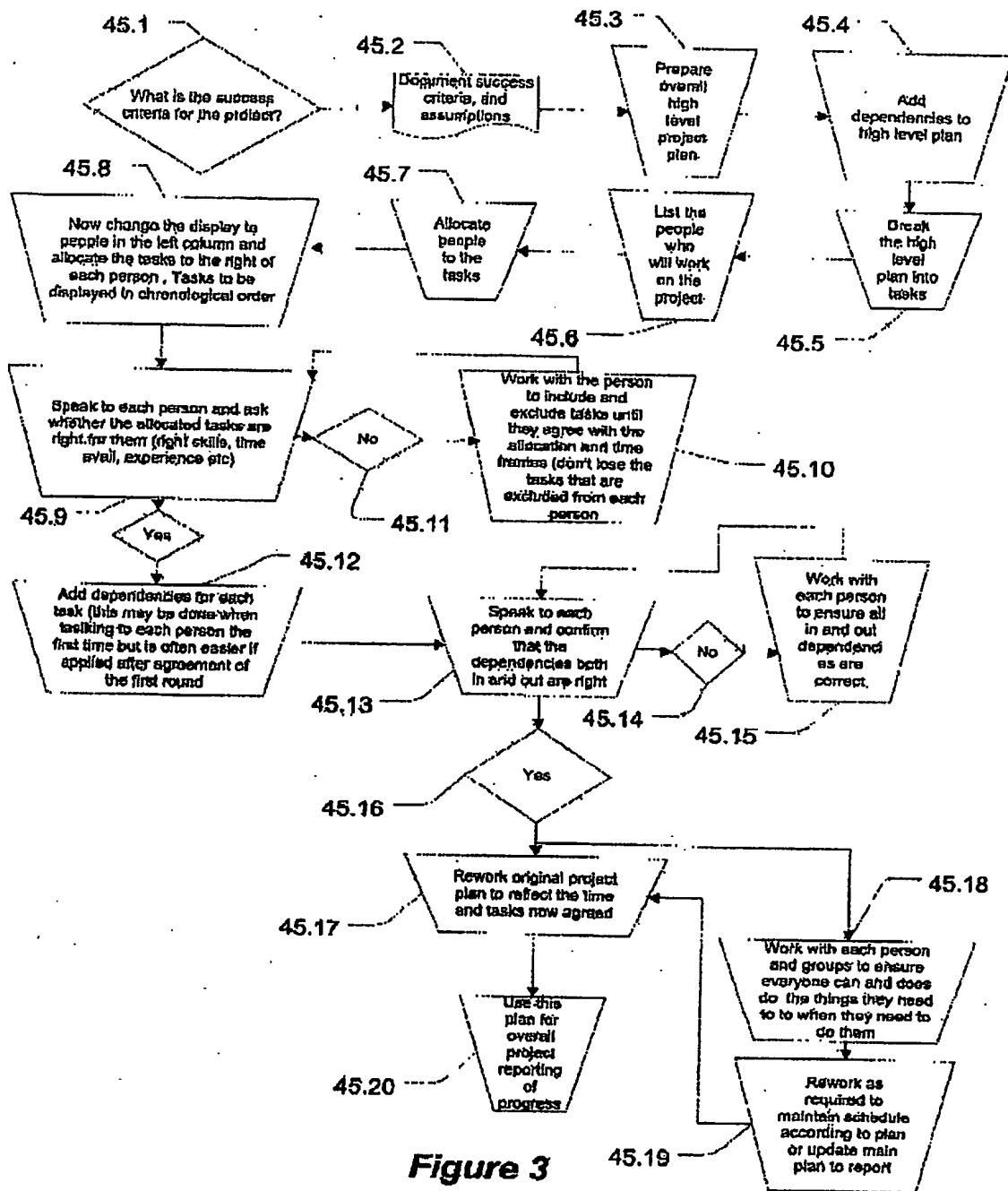


Figure 3

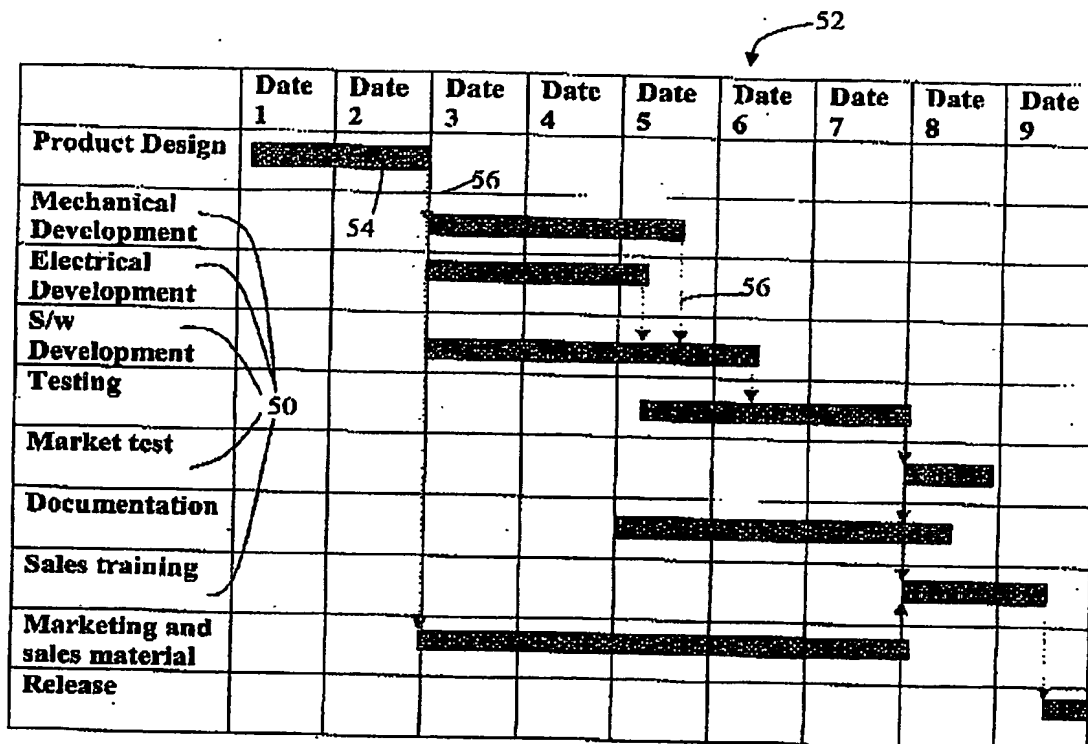


Figure 3a

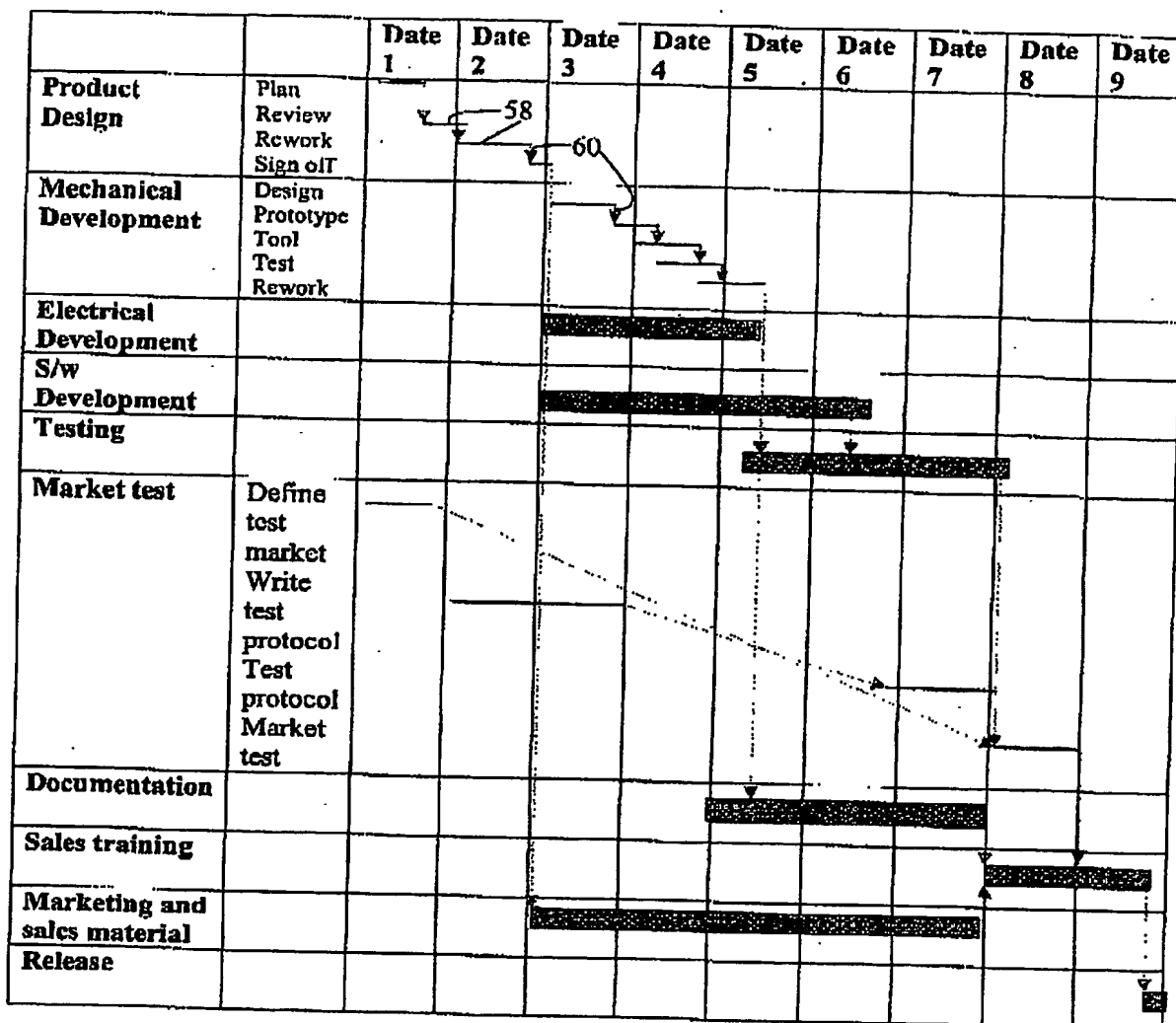


Figure 3b

	62					64			
	Date 1	Date 2	Date 3	Date 4	Date 5	Date 6	Date 7	Date 8	Date 9
Rob		Product review	Sign off						
Linda		Product review Write market test protocol	Sign off Write market test protocol Marketing and sales material Sign off	Write market test protocol Marketing and sales material	Testing Marketing and sales material	Testing Marketing and sales material	Testing Marketing and sales material	Market Test	
Ed									
Ian									
Alan	Product design	Product review	Design rework Sign off						
Ellen	Product design		Design rework Sign off		Testing	Testing	Testing	Test market protocol	
Nick	Product design		Design rework Sign off Mech Design Elec design Board layout Prototype Test Rework Release	Elec design Board layout Prototype Test Rework Release	File design Board layout Prototype Test Rework Release				
Sukumar			S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	Testing		
Susan	Product design		Design rework Sign off		Testing	Testing			
Gerard	Product design		Design rework Sign off		Testing				
John	Product design		Sign off S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	Testing Test market protocol		
Alex			Mech Design						

Figure 3c

	Date 1	Date 2	Date 3	Date 4	Date 5	Date 6	Date 7	Date 8	Date 9
Rob		Product review	Sign off						
Linda		Product review Define test market Write market test protocol	Sign off Write market test protocol Marketing and sales material	Write market test protocol Marketing and sales material	Testing Marketing and sales material	Testing Marketing and sales material	Testing Marketing and sales material	Market Test	
Ed			Sign off						
Ian									
Alan	Product design	Product review	Design review Sign off						
Ellen	Product design		Design rework Sign off		Testing	Testing	Testing	Test market protocol	
Nick	Product design		Design rework Sign off Mech Design Elec design Board layout Prototype Test Rework Release	Flec design Board layout Prototype Test Rework Release	Elec design Board layout Prototype Test Rework Release				
Sukumar			S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	Testing		
Susan	Product design		Design rework Sign off						
Gerard	Product design		Design rework Sign off		Testing				

Figure 3d

Date	Project plan task	Task
2	Review the product design	Review the product design
3	Sign off the product design	Sign off product design
2	Define the test market	get the marketing and field people together to jointly decide as it will need to fit into their schedule
2	Define the test market	Review the overall market release strategy
2	Define the test market	review the release plans
2	Define the test market	determine which is the best way to test the market
3	Market test protocol	determine the numbers required
2	Define the test market	write up the test market profile
3	Define the test market	get sign off from marketing and field people.
3	Market test protocol	Draft the market test protocol
3	Market test protocol	Review protocol with field staff
3	Market test protocol	Finalise market test protocol
4	Marketing and sales material	Hold brainstorming session re marketing and sales material – invite, field, sales, marketing staff and Ed.
4,5	Marketing and sales material	Get Pam to mock up some materials
5	Marketing and sales material	Hold review meeting
6	Marketing and sales material	Get Pam to contact suppliers for quotes and samples
6	Marketing and sales material	Get field and marketing and sales to estimate how many copies of each type of material they will require.
7	Marketing and sales material	Review samples
6	Marketing and sales material	Place quantities and locations in the distribution system
7	Marketing and sales material	Prepare budget for materials
7	Marketing and sales material	Get budget approval from Ed
7	Marketing and sales material	Place orders
9	Marketing and sales material	Check deliveries and authorize payments
9	Marketing and sales material	Place materials in store for distribution

Figure 3e

	Date 1	Date 2	Date 3	Date 4	Date 5	Date 6	Date 7	Date 8	Date 9	Date 10	Date 11
Linda		Product review Define test market	Sign off Write market test protocol	Marketing and sales material	Marketing and sales material	Marketing and sales material	Marketing and sales material	Market Test	Market Test	Market Test	

Figure 3f

	Date 1	Date 2	Date 3	Date 4	Date 5	Date 6	Date 7	Date 8	Date 9	Date 10	Date 11
Rob		Product review	Sign off								
Linda		Product review Define test market	Sign off Write market test protocol	Marketing and sales material	Marketing and sales material	Marketing and sales material	Marketing and sales material	Market Test	Market Test	Market Test	
Ed			Sign off								
Ian											
Alan	Product design	Product review	Design rework Sign off								
Ellen	Product design		Design rework Sign off		Testing	Testing	Testing	Test market protocol			
Nick	Product design		Design rework Sign off Mech Design Elec design Board layout Prototype Test Rework Release	Elec design Board layout Prototype Test Rework Release	Elec design Board layout Prototype Test Rework Release						
Sukumar			S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	S/w Design Dev Testing Release	Testing				
Susan	Product design		Design rework Sign off		Testing	Testing	Testing				
Gerard	Product design		Design rework Sign off		Testing						

Figure 3g

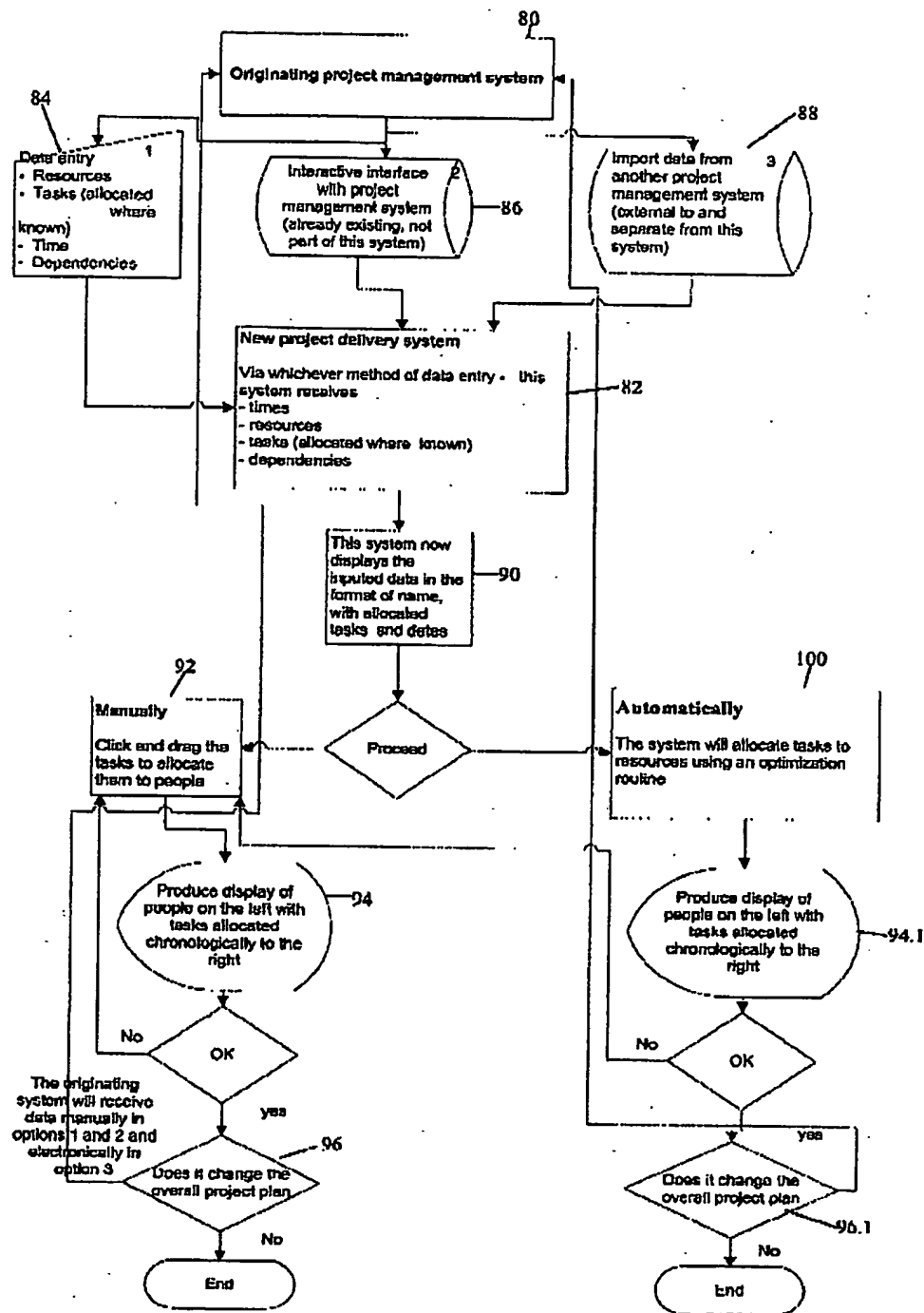
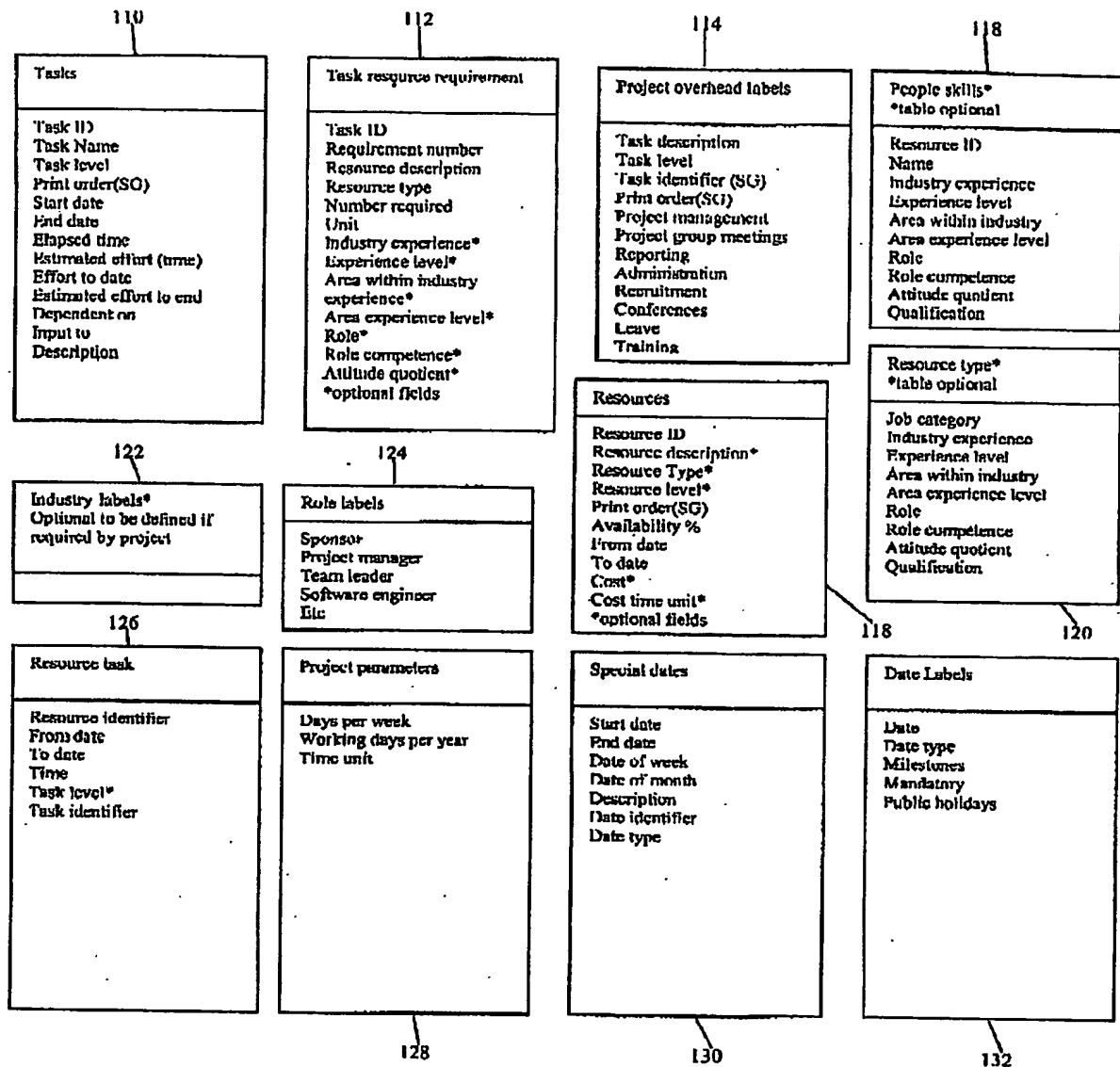


Figure 4

**Figure 5**

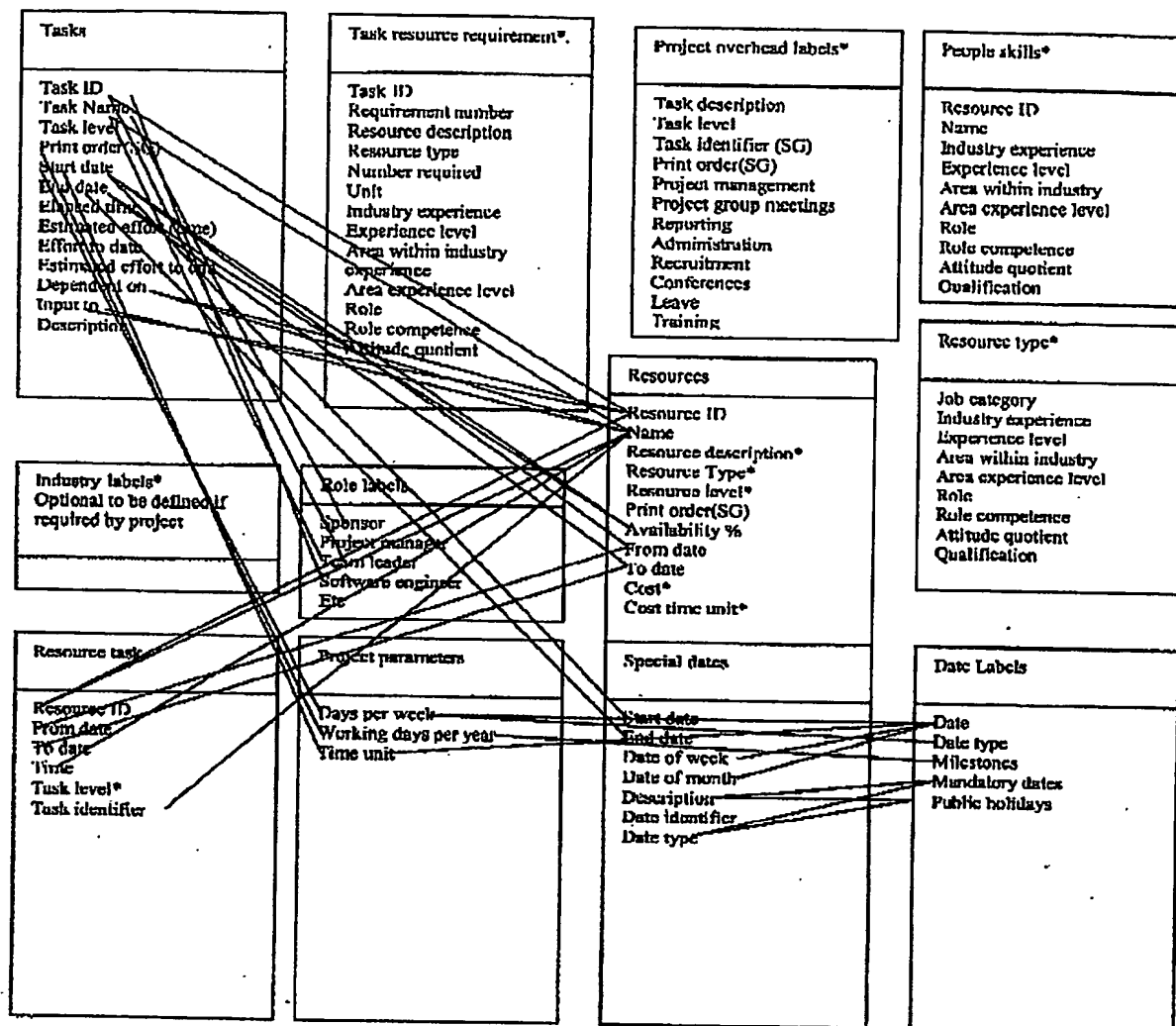


Figure 6

Person (resource)	Task	Outstanding (or complete)	Estimated Days (original)	Est. Elapsed Days (original)	Start Planned (Date)	Finish Planned (Date)	Effort (actual to date)	Forecast Est. (now to complete)	Forecast new date (to complete)	Variance
Linda	Product review	Complete	1	1	Date 2	Date 2	1			0
	Define the test market	Complete	3	5	Date 2	Date 2	2			-1
	Sign off	Complete	1	1	Date 3	Date 3	1			0
	Write market test protocol	Outstanding	10	20	Date 3	Date 3	2	8	Date 6	0
	Marketing and sales material	Outstanding	20	80	Date 4	Date 7	4	16	Date 7	0
	Market test	Outstanding	15	60	Date 8	Date 10	0	15	Date 10	0

Figure 7

Task Number	Task	Outstanding (or complete)	Estimated Days (original)	Est. Elapsed Days (original)	Start Planned (Date)	Finish Planned (Date)	Effort (actual to date)	Forecast Est. (now to complete)	Forecast new date (to complete)	Variance
1	Product review	Outstanding	60	140	Date 1	Date 7	33	27	Date 7	0
2	Write market test protocol	Outstanding	40	40	Date 2	Date 3	20	40	Date 4	+20
3	Product design	Complete	40	40	Date 1	Date 2	50			+10
4	Marketing and sales material	Outstanding	50	100	Date 3	Date 7	0	50	Date 7	0
5	Testing	Outstanding	60	60	Date 5	Date 8	10	50	Date 8	0
6	S/w development	Outstanding	70	70	Date 3	Date 6	40	50	Date 9	+20
7	Mechanical Development	Outstanding	50	50	Date 3	Date 5	40	40	Date 7	+30
8	Electrical Development	Outstanding	50	50	Date 3	Date 5	20	40	Date 8	+10
9	Electrical prototype	Outstanding	10	25	Date 4	Date 5	10	10	Date 7	+10

Figure 8

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